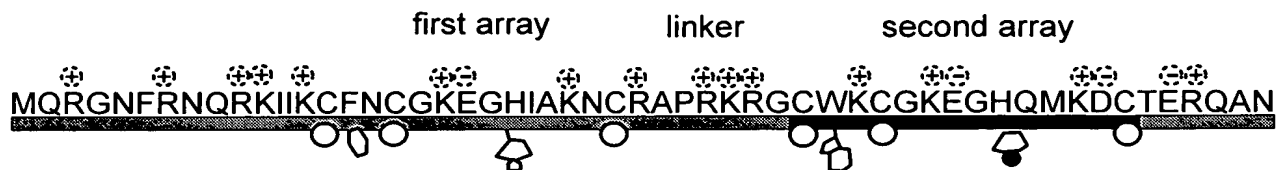


FIG. 1

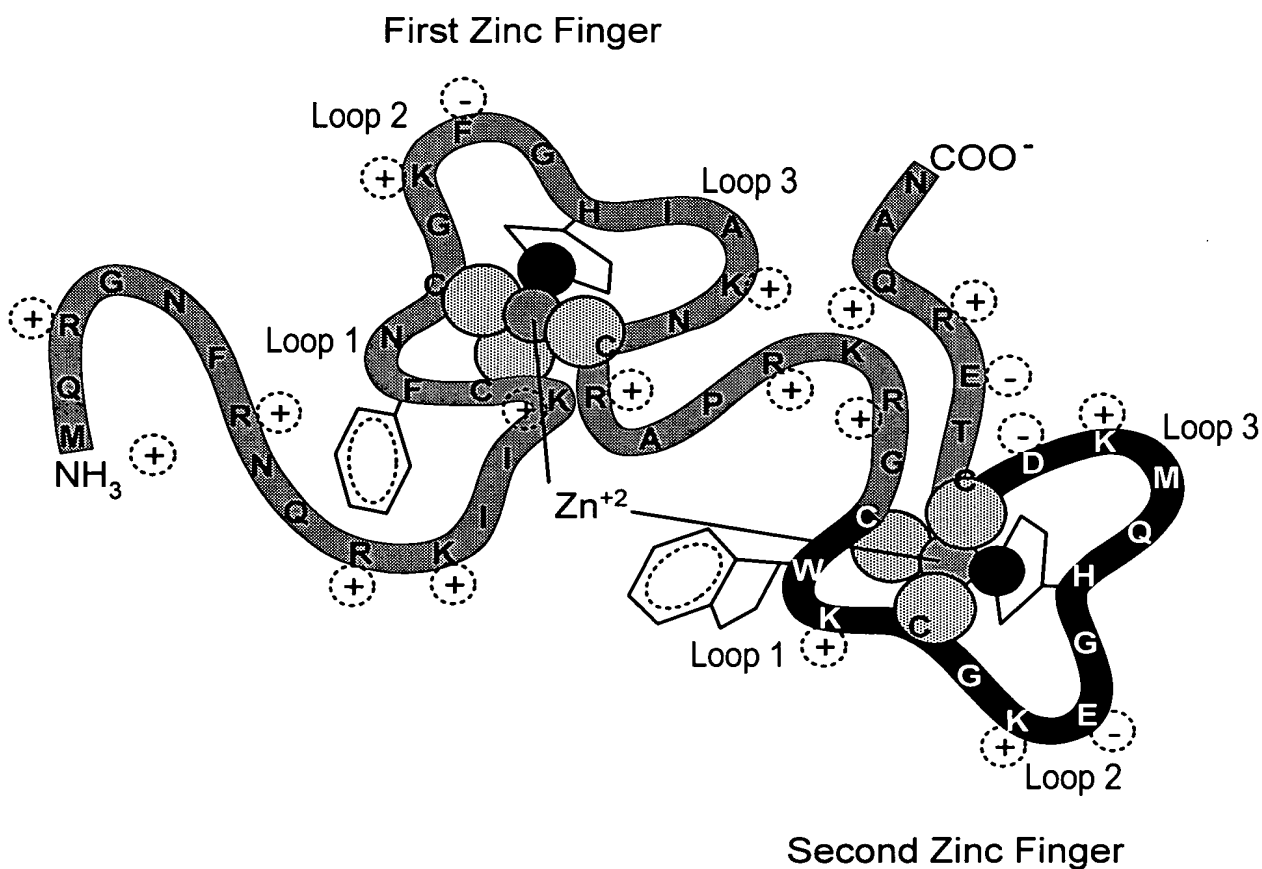
2/15



Total Residues.....55
Basic Residues.....15
Acid Residues.....4
Net Charge.....+11
IEP.....10.77

Molecular
Weight.....6451.5

280nm Molar
Absorption.....6050

**FIG. 2**

3/15

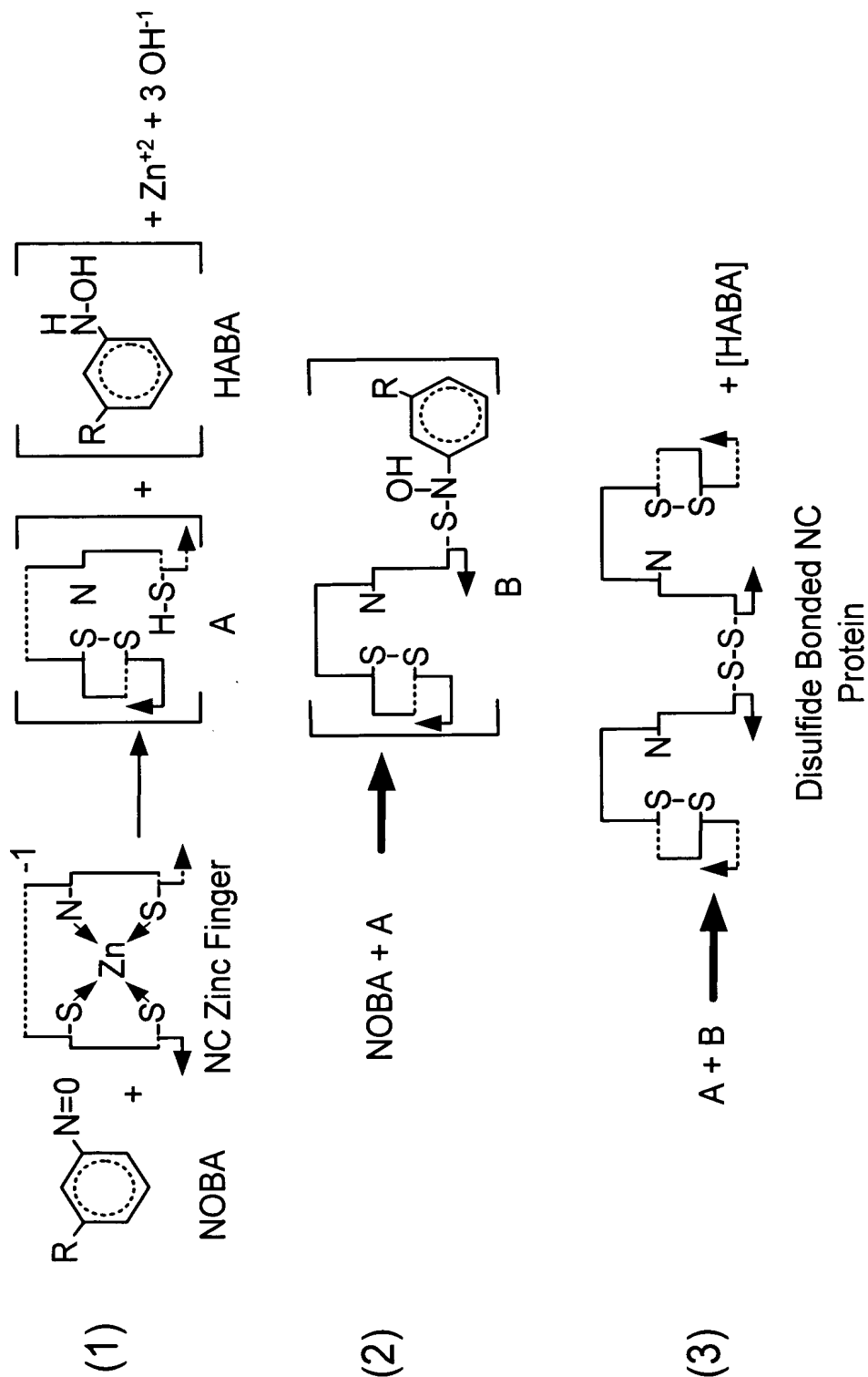
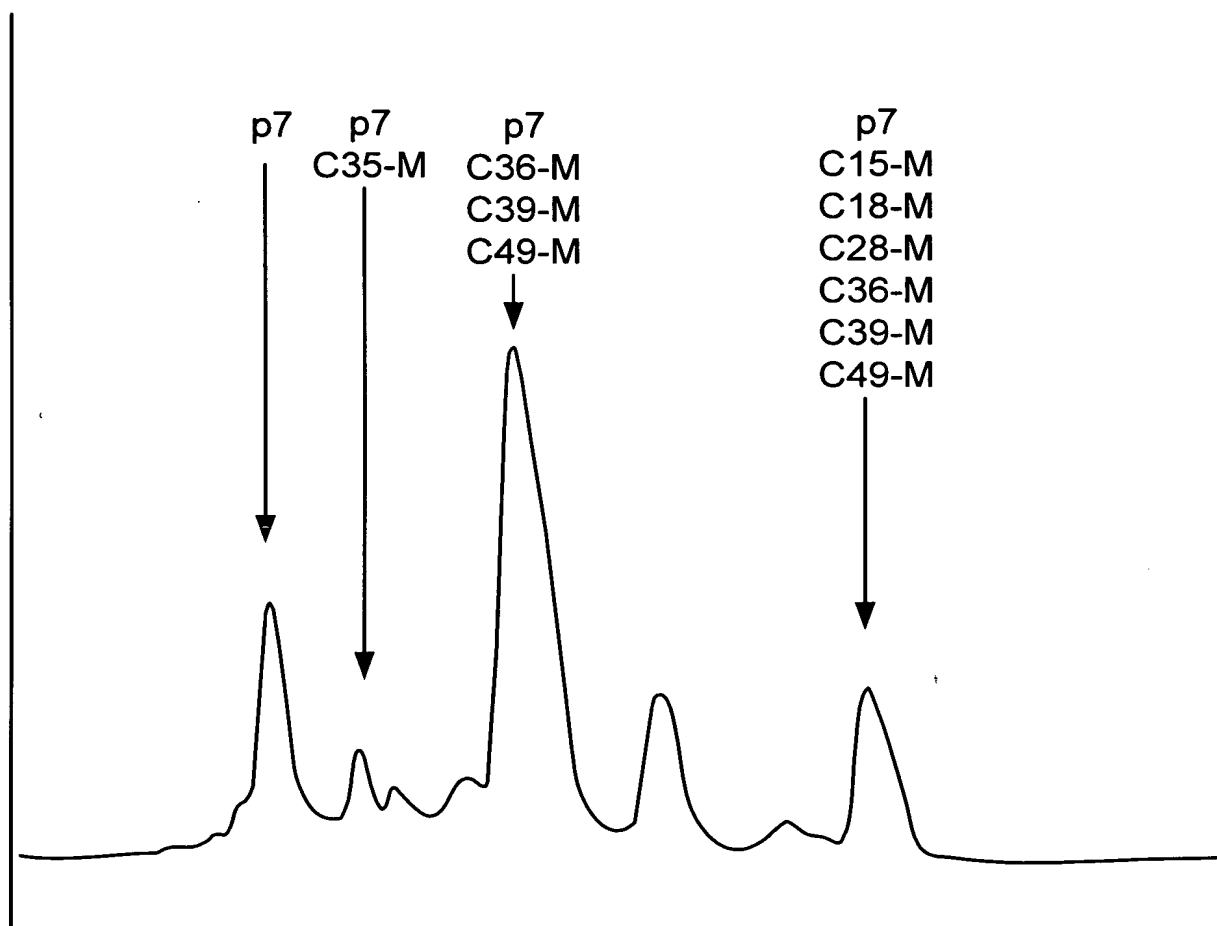


FIG. 3



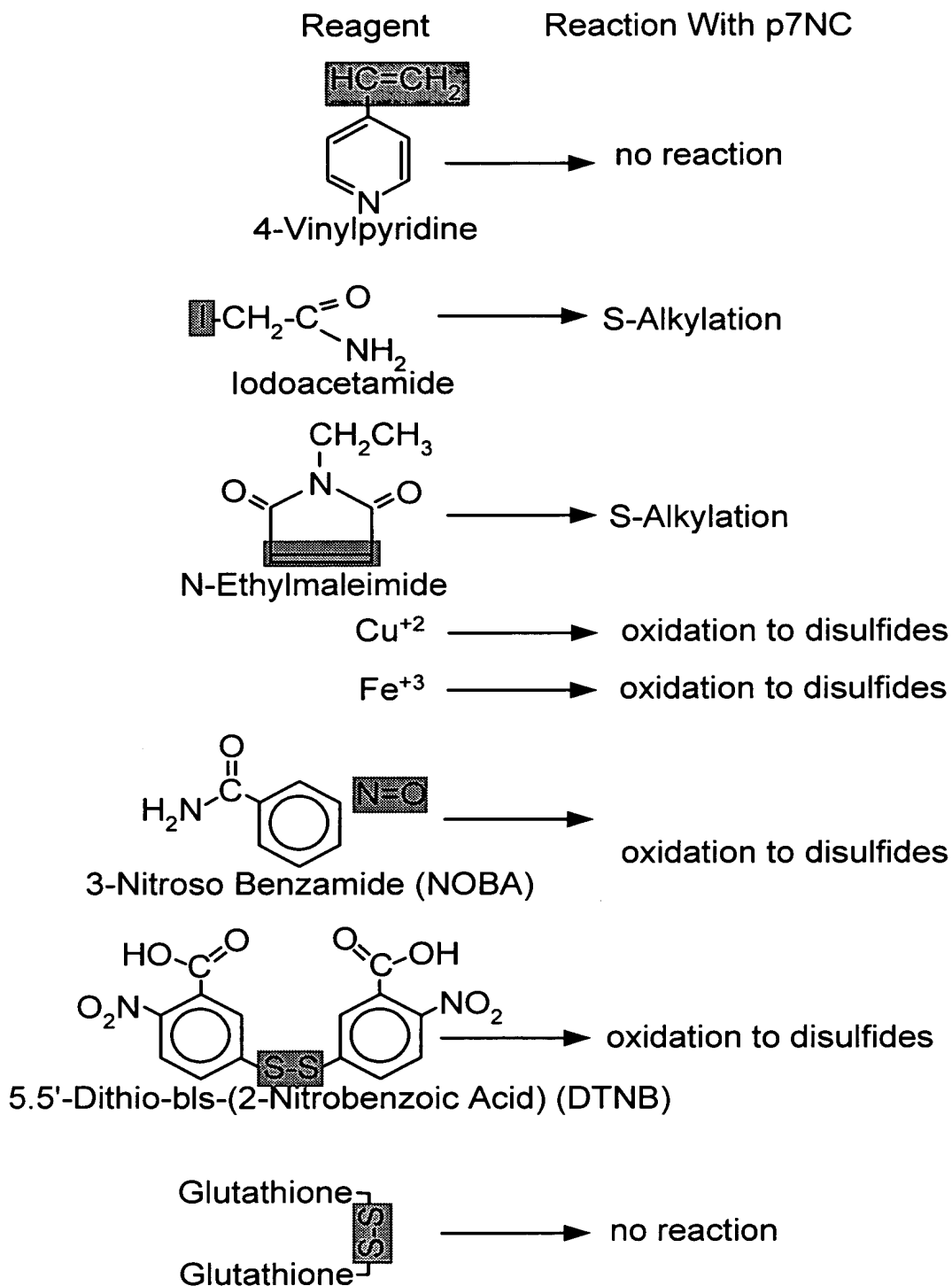
5/15



Reaction conditions: 52 mM p7NC + 744 mM NEM; pH 7.0, 60min. at RT.
The positions of alkylated Cys residues were determined by sequence analysis of separated proteins and are indicated by the notation C#-M.

FIG. 5

6/15



The reactive functional groups are shaded

FIG. 6

7/15

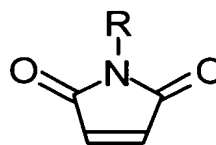
disulfides



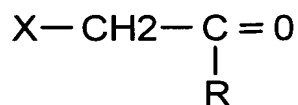
nitroso compounds



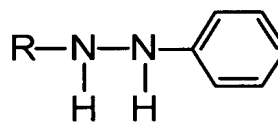
maleimides



α -halogenated ketones



phenylhydrazids



Nitric Oxide and Derivatives NO

cupric ions and complexes Cu^{+2}

ferric ions and complexes Fe^{+3}

where R is any atom or molecule, and X is selected from the group consisting of F, I, Br and Cl.

FIG. 7

8/15

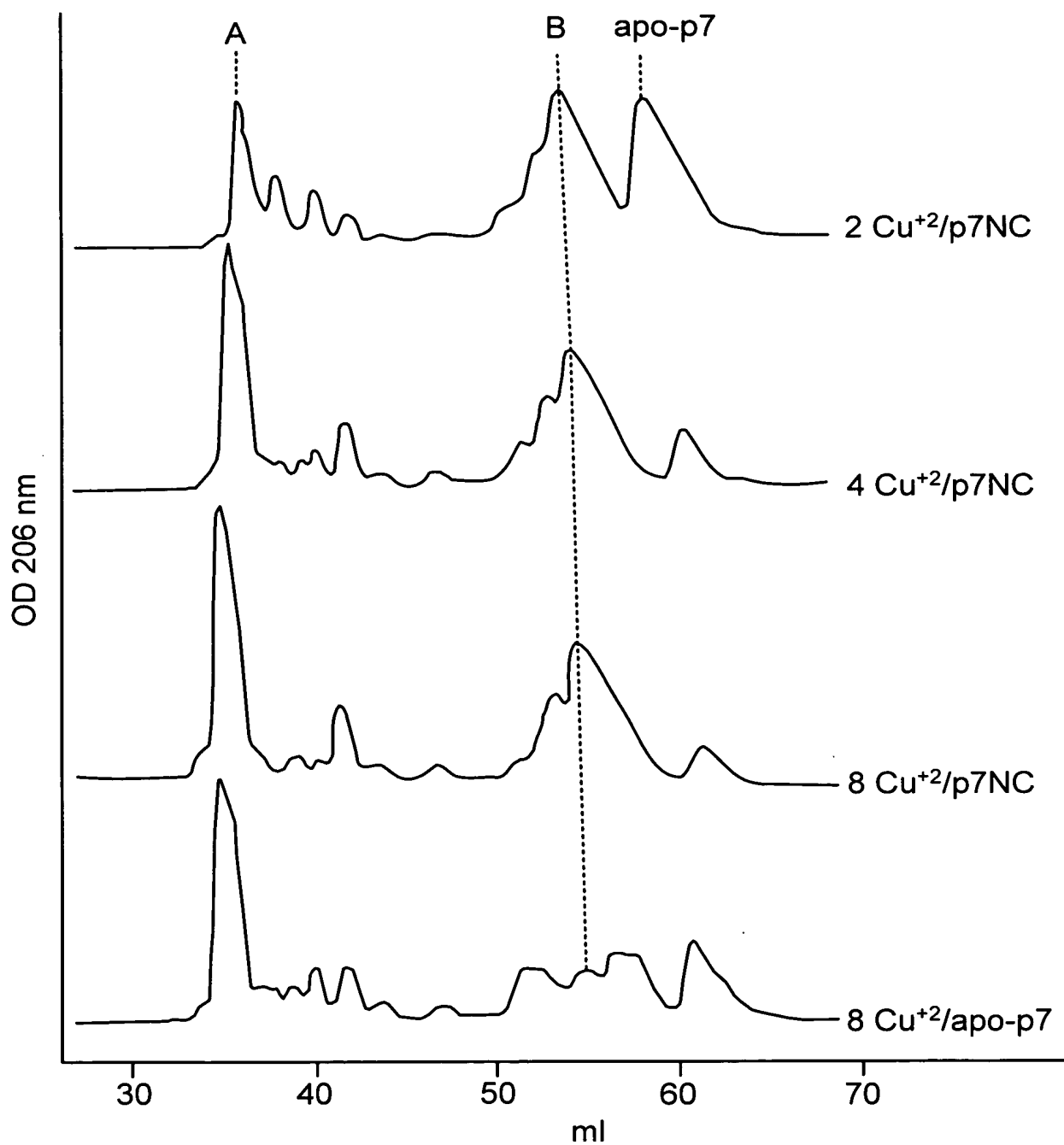


FIG. 8

9/15

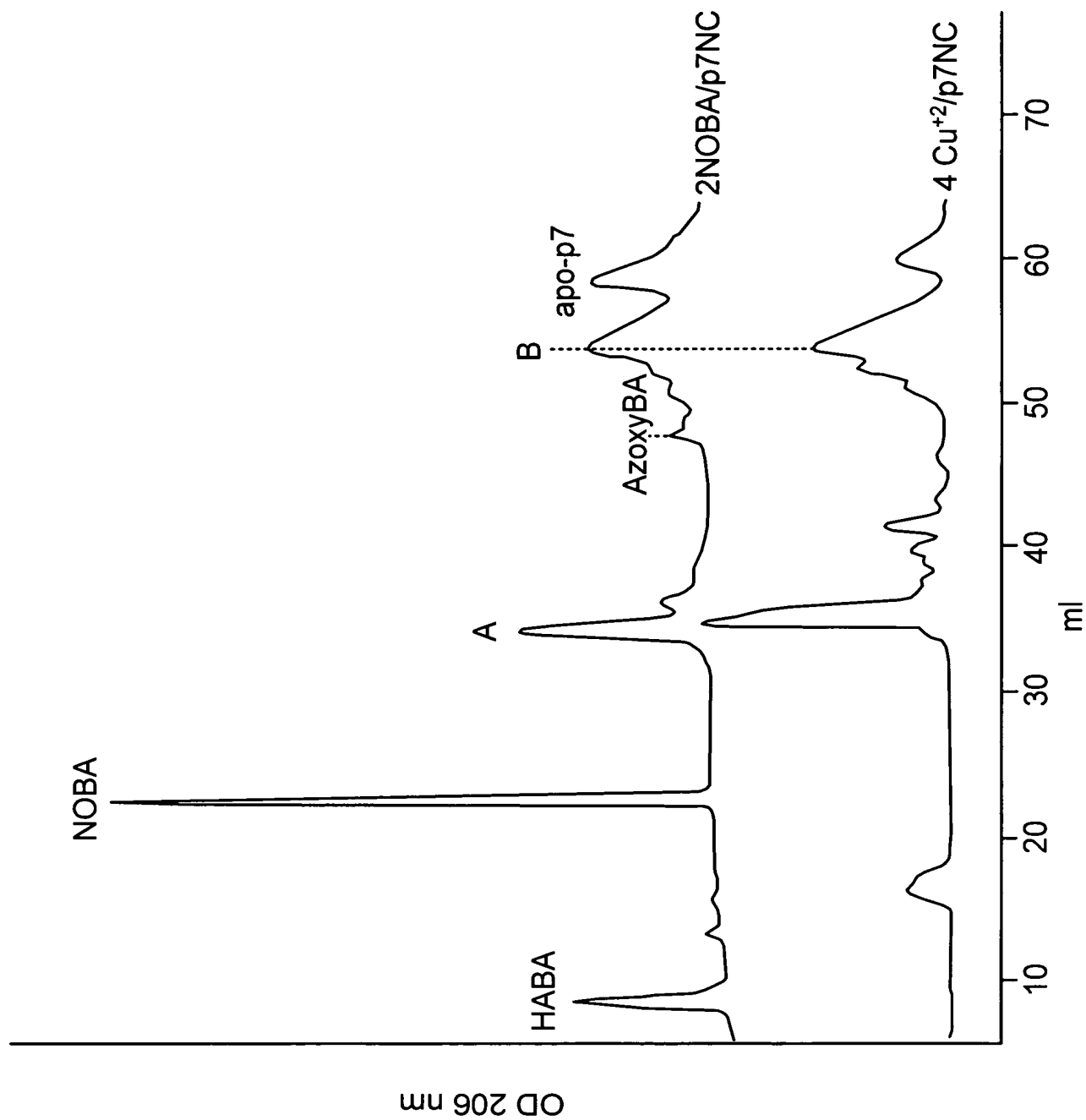


FIG. 9

10/15

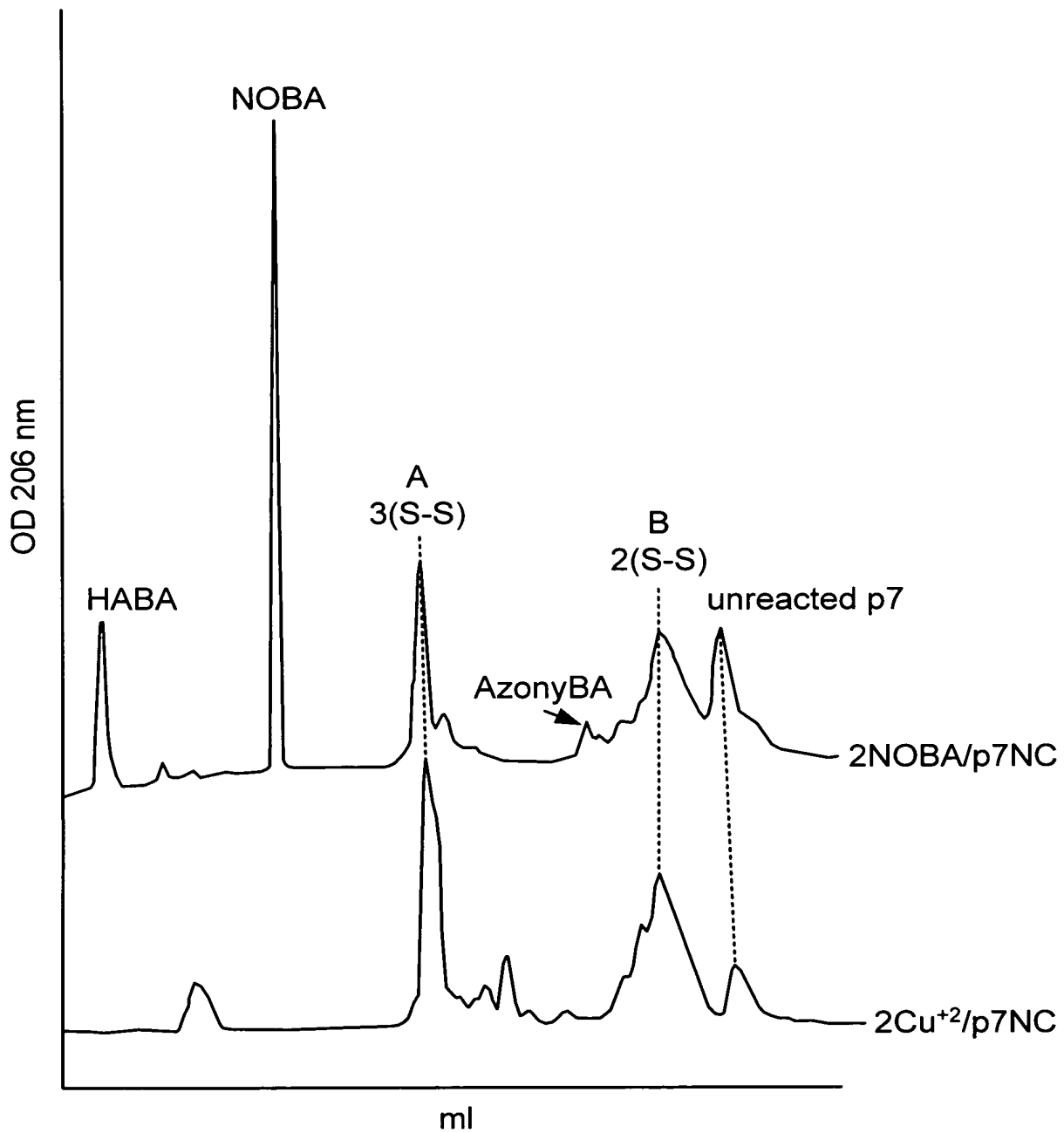


FIG. 10

11/15

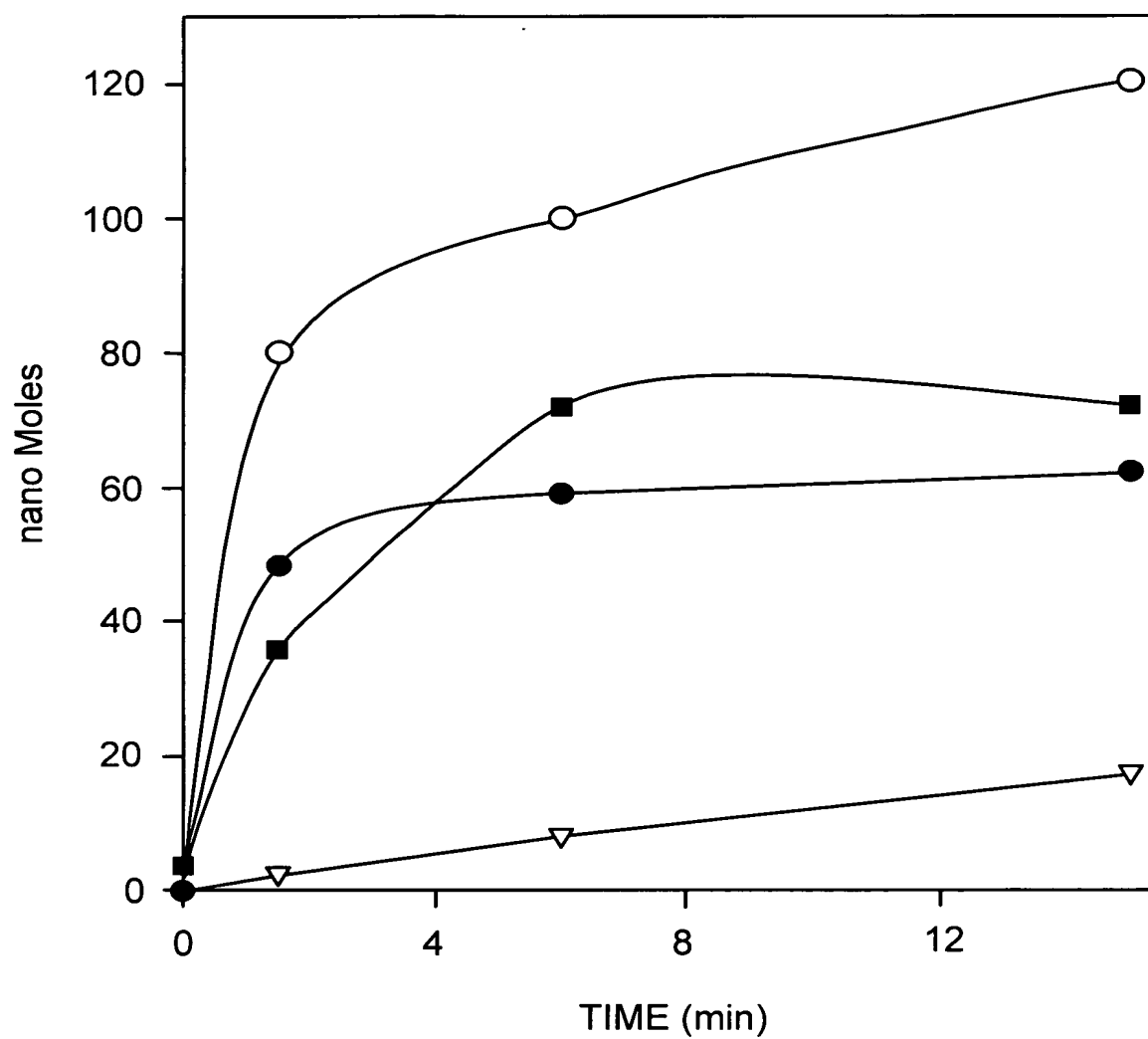
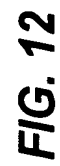


FIG. 11

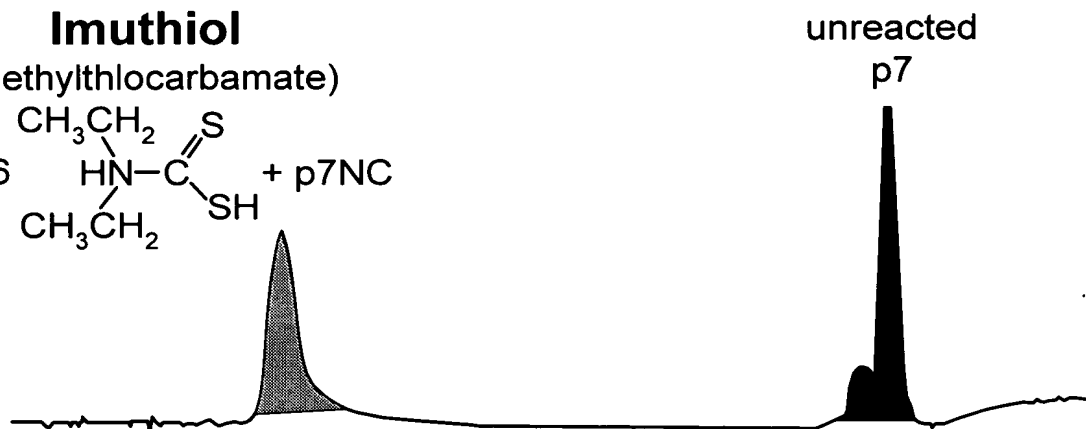
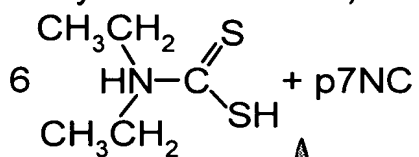

$$3 \text{ Tetraethylthiuram Disulfide} + \text{p7NC} \rightarrow \text{Oxidized p7 (3 S-S)} + 6 \text{ Diethylthiocarbamate} + 2 \text{ Zn}^{+2}$$
$$4 \text{ Diethylthiocarbamate} + 2 \text{ Zn}^{+2} \rightarrow 2 \text{ Coordination Complexes}$$

13/15

Control
 buffer + p7NC



Imuthiol
 (Diethylthiocarbamate)



Disulfiram
 (Tetraethylthiuram Disulfide)

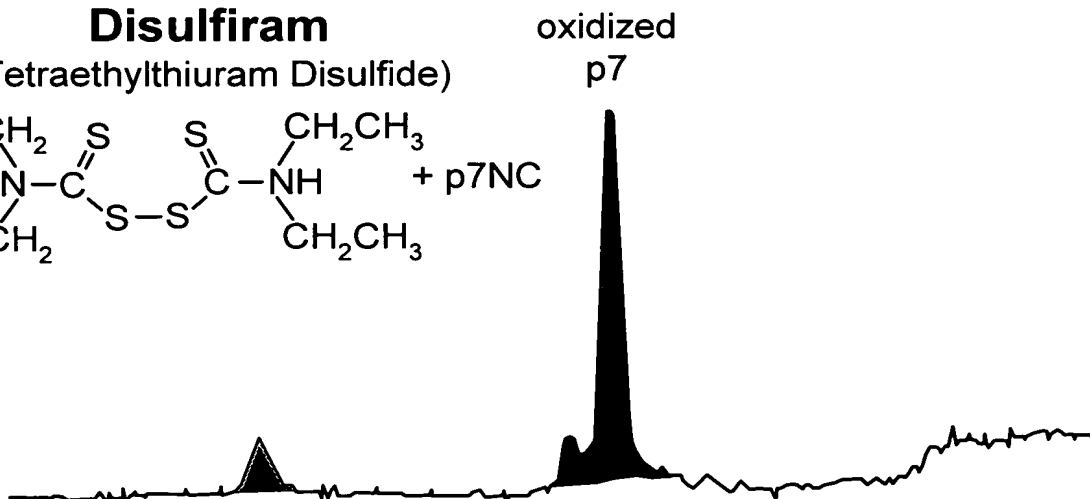
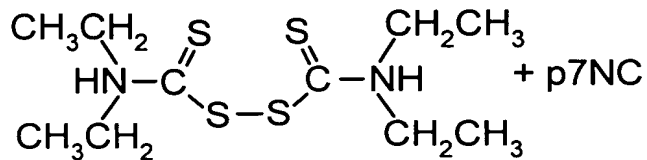
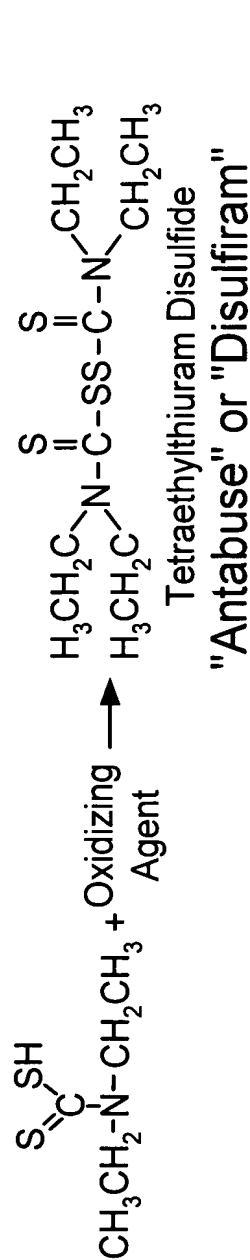
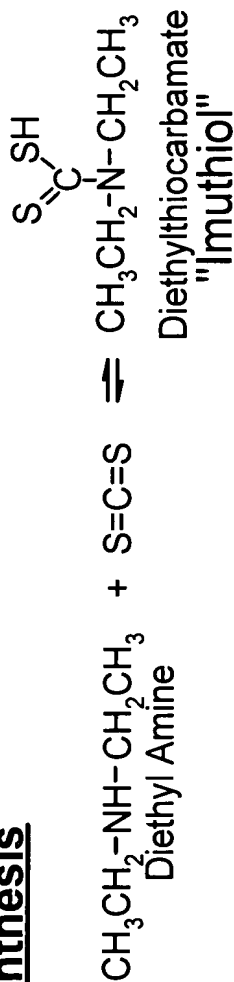


FIG. 13

14/15

Synthesis



General Reactions

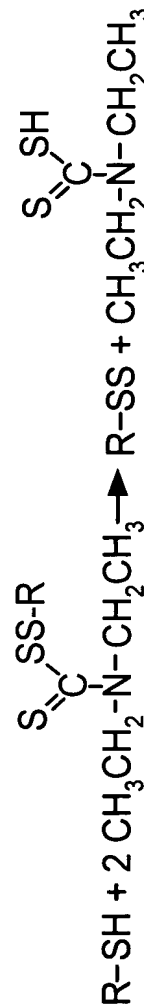
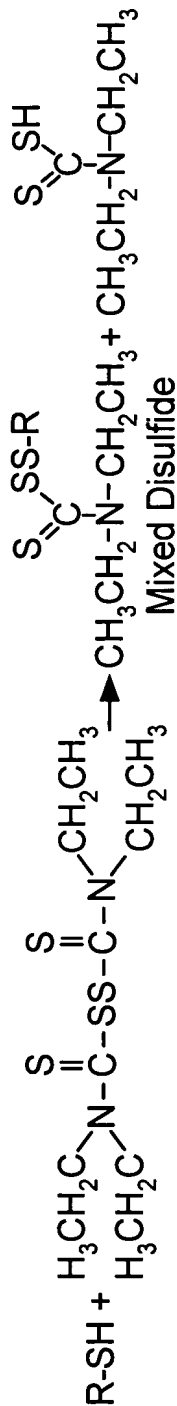
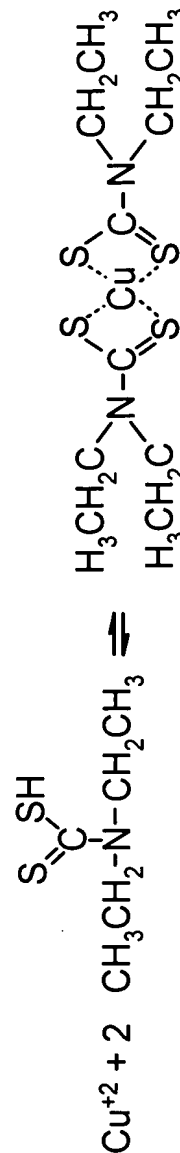


FIG. 14



15/15

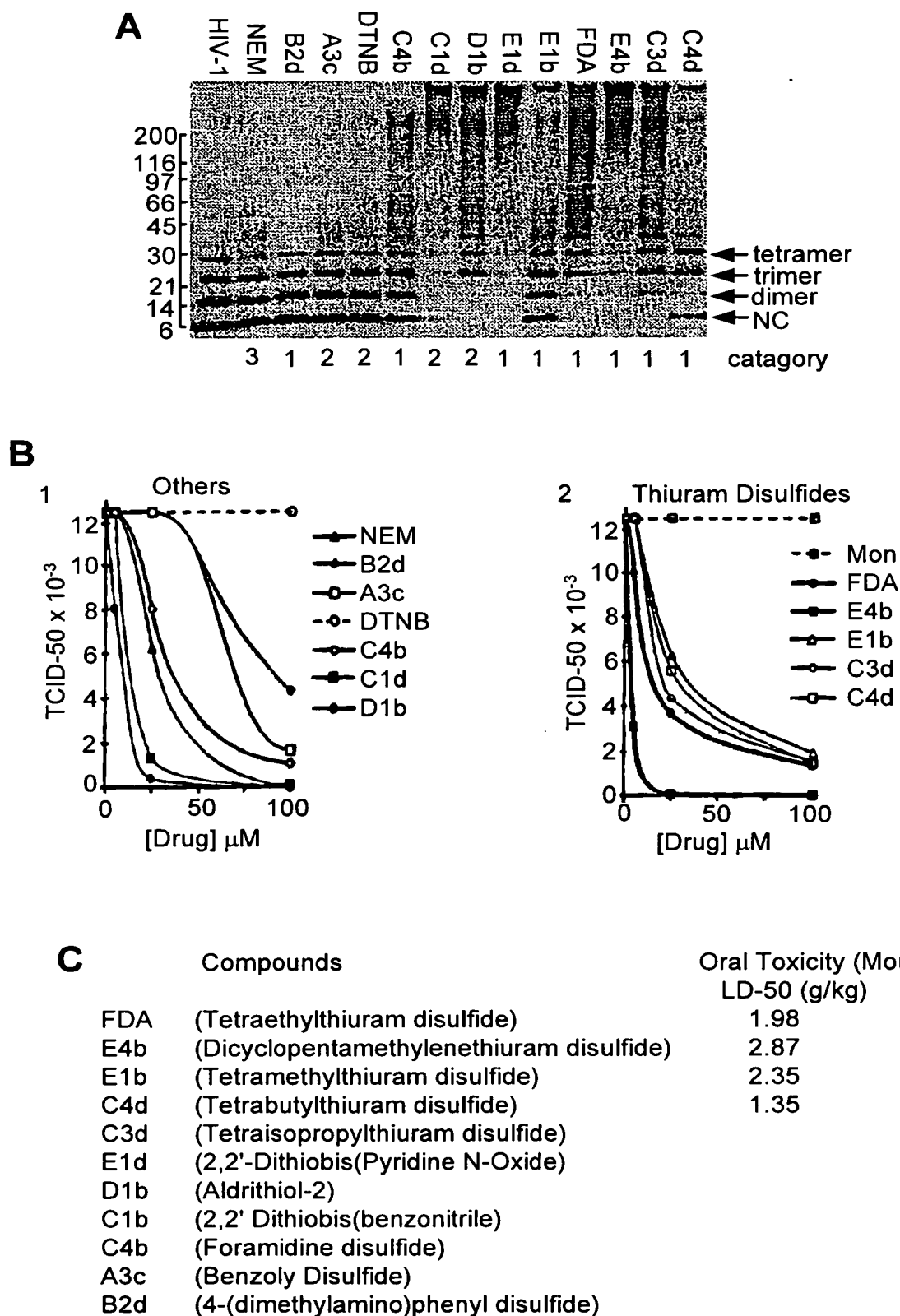


FIG. 15